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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/567,551 | 03/06/2006 | Akihiko Nishio | L9289.06106 | 9256 |
| 52989 | 7590 | 06/05/2009 | | |
| Dickinson Wright PLLC | | | EXAMINER | |
| James E. Ledbetter, Esq. | | | CASCA, FRED A | |
| International Square | | | | |
| 1875 Eye Street, N.W., Suite 1200 | | | ART UNIT | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | |
|------------------------------|--------------------------------------|--------------------------------------|
| Office Action Summary | Application No. 10/567,551 | Applicant(s) NISHIO ET AL. |
| | Examiner FRED A. CASCA | Art Unit 2617 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 17 March 2009.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 16-20 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 16-20 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application Paper No(s)/Mail Date _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to applicant's amendment filed on March 17, 2009. Claims 16-20 are still pending in the present application. **This Action is made FINAL.**

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 16-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

New and independent claims 16, 19 and 20 have been added and they contain new matter. The phrase "a transmitting section that transmits information of an arrangement of a plurality of time slots each having pilot signals of a unique pilot pattern of a unique arrangement density in a frequency domain or a time domain, and that transmits per time slot the pilot signals of the unique pilot pattern according to the arrangement of the plurality of time slots" added to independent claim 16 and similar limitations added to independent claims 19 and 20 has not been described in the specification. Particularly, the specification does not describe the new limitations, "arrangement of a plurality of time slots," "unique pilot pattern of a unique

arrangement density," and "pilot signals of the unique pilot pattern according to the arrangement of teh plurality of time slots." The specification recites in Par. 139, the arrangement of pilot symbols in each time slot, but not how the slots are arranged.

Further, dependent claims 17 and 18 have been added and contain new matter. The phrase, "section repeats processing of transmitting per time slot the pilot signals of the unique pilot pattern according to the arrangement of the plurality of time slots," in claim 17 has not been described in the specification, and the phrase, "a multiplexing section that multiplexes the pilot signals of the unique pilot pattern and user data according to the arrangement of the plurality of time slots," in claim 18 has not been described in the specification.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 16-17 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuda (US 6,553,038) in view of Nilsson (US 2003/0022685 A1).

Referring to claim 16, Fukuda discloses a transmitting apparatus that transmits a pilot signal (abstract and figure 1) , the transmitting apparatus comprising:

a transmitting section that transmits information of an arrangement of a plurality of time slots (col. 16, lines 22-25).

Fukuda does not specifically disclose each having pilot signals of a unique pilot pattern of a unique arrangement density in a frequency domain or a time domain, and that transmits per time slot the pilot signals of the unique pilot pattern according to the arrangement of the plurality of time slots.

Nilsson discloses that signals in each time slot comprise a block of pilot symbols followed by a block of data symbols where slots 36-40 respectively contain pilot blocks 36b-40b and data blocks 36c-40c (Par. 19).

It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the invention of Fukuda in the format claimed by incorporating the teachings of Nilsson, for the purpose of providing an efficient communication system.

Referring to claim 17, the combination of Fukuda/Nilsson discloses the transmitting apparatus according to claim 16, and inherently discloses the transmitting section repeats processing of transmitting per time slot the pilot signals of the unique pilot pattern according to the arrangement of the plurality of time slots (Fukuda, col. 16, lines 22-25 and Nilsson, par. 19).

It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the invention of Fukuda in the format claimed by incorporating the teachings of Nilsson, for the purpose of providing an efficient communication system.

Claims 19 and 20 are analogous to the features of claim 16. Thus, the combination of Fukuda/Nilsson discloses all elements of claims 19 and 20.

5. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuda (US 6,553,038) in view of Nilsson (US 2003/0022685 A1) and further in view of well known prior art (MPEP 2144.03).

Referring to claim 18, (the combination of Fukuda/Nilsson discloses the transmitting apparatus according to claim 16.

The combination does not specifically disclose a multiplexing section that multiplexes the pilot signals of the unique pilot pattern and user data according to the arrangement of the plurality of time slots to generate a multiplexed signal, wherein the transmitting section transmits the multiplexed signal.

The examiner takes official notice of the fact that multiplexing pilot symbols is well known in the art.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the combination in the format claimed for the purpose of providing an efficient communication system.

Response to Arguments

6. Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred A. Casca whose telephone number is (571) 272-7918. The examiner can normally be reached on Monday through Friday from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Harper, can be reached at (571) 272-7605. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/VINCENT P. HARPER/

Supervisory Patent Examiner, Art Unit 2617